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## BOX PATENT APPLICATION

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- ☒ Transmittal sheet, in duplicate, containing Certificate under 37 CFR 1.10.
- ☒ Utility Patent Application: Spec. 18 pgs; 20 claims; Abstract 1 pg.  
The fee has been calculated as shown below in the 'Claims as Filed' table.
- ☒ Five (5) sheets of drawings
- ☒ A signed Combined Declaration and Power of Attorney
- ☒ Assignment of the invention to The Walt Disney Company, Recordation Form Cover Sheet
- ☒ A check in the amount of \$710.00 to cover the Filing Fee
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## CLAIMS AS FILED

Number of Claims Filed		In Excess of:		Number Extra		Rate		Fee
<b>Basic Filing Fee</b>								<b>\$710.00</b>
<b>Total Claims</b>								
20	-	20	=	0	x	18.00	=	\$0.00
<b>Independent Claims</b>								
3	-	3	=	0	x	80.00	=	\$0.00
<b>MULTIPLE DEPENDENT CLAIM FEE</b>								<b>\$0.00</b>
<b>TOTAL FILING FEE</b>								<b>\$710.00</b>

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SYSTEM AND METHOD FOR ENHANCED BROADCASTING  
AND INTERACTIVE TELEVISION

by

Scott Watson

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FIELD OF THE INVENTION

This invention relates to television broadcasting and viewers' experience therewith. More particularly, the invention relates to the degree with which a viewer can interact with or become a part of a conventional television broadcast.

BACKGROUND OF THE INVENTION

Television has long been enjoyed in our society as a means for delivering information for the enhancement of knowledge as well as for delivering content with entertainment value. In all of its uses, however, television has remained a one-way experience for the viewer, wherein viewers do not have the opportunity or ability to interact with the content of a television broadcast. In fact, television has in many cases been criticized for simply "feeding" broadcast material to viewers without requiring any thought, participation, or feedback from the viewers. For these reasons, television is often regarded as having a deleterious effect on the development of children's communication skills and thought processes.

Television Journalist Edward R. Murrow said in TV Guide, December, 1958, "This instrument can teach, it can illuminate; yes, and it can even inspire. But it can do so only to the extent that humans are determined to use it to those ends. Otherwise it is merely light and wires in a box." Indeed, nearly half a century later, utilizing television for educational purposes continues to be an area to which much attention is focused. Many of today's television programs

are geared toward educational purposes, schools use televisions as educational tools, and classes can even be taught television networks. Yet even with the all the effort to utilize television as an educational tool, television remains a one-way experience for a viewer, continuing to charm “couch potatoes” the world over. The criticism remains that television dulls the mind through its inability to provide an interactive environment for viewers.

While television remains devoid of interactive experiences, the potential of interaction between multiple persons has been greatly heightened in recent years due to the popularity of the Internet. The Internet provides a powerful network for exchanging content, messages, and user inputs, enabling various users to achieve a level of interaction that was previously unknown. However, this interaction is typically limited to individual instances, making large broadcast interactive experiences impossible. The camaraderie generated by post-broadcast discussions amongst viewers who witnessed the same show simply is not available to computer users who engage in unique interactive sessions not experienced by the number of users typically reached by a television broadcast. Furthermore, this interaction has been constrained to the realm of computers, and there remains a lack in the technology for providing systems which allow or support viewer interaction and participation in television programming.

Many recent prior art television based systems have attempted to address the need for interactivity between television and its viewers. U.S. Patent No. 4,926,255 by Von Kohorn discloses a system wherein users can individually answer questions related to a television broadcast, and receive information as to the accuracy of their answers. However, Von Kohorn does not provide the ability for users to interact with one another during a television broadcast such as by competing against each other and receiving relative scores. Conversely, the prior art system of U.S. Patent No. 5,343,239 by Lappington, et al., teaches a system that has the

capability to store a plurality of audience scores at a central location. However, Lappington requires each user to manually deliver his individual result to the central location, and further fails to disclose a method for comparing the plurality of results for purposes of ranking or scoring the users relative to one another. Thus, no direct interaction is available. U.S. Patent  
5 No. 5,013,038, by Luxenberg, et al., does disclose a system that enables remote users to compete relative to one another. However, this system requires individual users to telephone a central system for entering their respective results, and provides relative scoring for only a small, statistically selected group of users.

Thus, none of these prior art systems enables remote users to interact with or to compete  
10 with each other relative to a television program, to receive relative scoring for the entire group of remote users, or to receive relative scoring for any customized user-selected subgroup of users. Furthermore, none of these systems specifically provides for the integration of Web content with traditional television broadcasting.

More recently, television-integrated Web access has become known in the art. However,  
15 these later systems generally continue to fail to provide interactive capabilities for the user to communicate with the content of the television program. These systems operate by controlling a user's web browser to automatically retrieve web pages during the time of a television broadcast. However, these systems only deliver website addresses (URLs) to a user and do not allow for the involvement of the user in the broadcast content. They merely provide supplemental content to  
20 be read, viewed, or heard during a television broadcast. Consequently, there is not currently a means for a television viewer to enjoy an interactive experience with the content and timeline of a television broadcast or with other viewers.

## SUMMARY OF THE INVENTION

The invention seeks to provide television audiences with the possibility for viewer participation in a television broadcast through interaction with the broadcast content. The present invention utilizes a delivery network, such as the Internet, for delivering television broadcast “enhancements” to a viewer, such that the viewer may not only watch a television program, but also can participate in and enjoy a previously unknown interactive experience with the content and timeline of that program. The interaction of the present invention can either be driven exclusively client-side or require client-server interaction.

In the exclusively client-side interaction feature of the present invention, the user receives information from a broadcast and is not required to return information to a broadcaster or to any other remote location. Instead, a custom software application is placed on the user’s computer to act as an interface and to facilitate the interactive experience locally. Thus, the interactivity occurs client side, in contrast to prior art interactivity which requires users to interact directly with the server.

The client-server interaction feature of the present invention does require users to communicate directly with the server. However, This form of interaction enables users to alter content of a broadcast in progress. The client-server interaction enables a broadcaster to utilize and respond to user input, as by altering or creating broadcast content in direct response to users’ inputs to the server. For example, users can participate in a football game as it is broadcast on television by providing predictions, requests or suggestions to a broadcaster server computer during the television game broadcast. Producers, broadcasters, coaching staff, or others involved with the football game will receive this users’ input, consider it, and be influenced to change the course of the game or the manner in which it is being broadcast. Thus, users of systems of the

present invention are provided with a venue for direct participation in live events as they are broadcast on television.

Embodiments of the present invention utilizing either form of interaction describe above both feature synchronized timing characteristics. The enhancements used to enhance television programming are related to the television broadcast content and are synchronized in time with the television broadcast. The resulting effect is one of interaction with the television broadcast in a realistic, time-sensitive setting.

Embodiments of the present invention also enable users to compete with each other, either against the totality of all users or against only a subset of users. In the latter case, the subset of users may be pre-defined or, alternatively, may be customized and selected by one user.

The foregoing and other objects, features, and advantages of the present invention will become apparent from a reading of the following detailed description of exemplary embodiments thereof, which illustrate the features and advantages of the invention in conjunction with references to the accompanying drawing Figures.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG 1 illustrates an enhanced broadcasting system according to an embodiment of the invention;

FIG 2 illustrates an exemplary DHTML document layout according to an embodiment of the present invention;

FIG 3 illustrates an exemplary DHTML document, after receiving a code fragment input, according to an embodiment of the present invention;

FIG 4 is a flow chart illustrating functionality exemplary of a client-side software application according to an embodiment of the present invention;

FIG 5 illustrates an exemplary scenario occurring in an enhanced broadcasting system according to an embodiment of the present invention;

FIG 6 illustrates a score leaderboard exemplary of one feature of the present invention;

FIG 7 illustrates an alternative version of a score leaderboard exemplary of a different  
5 feature of the present invention; and

FIG 8 is an exemplary data entry dialogue box for customizing yet another version of an alternative score leaderboard, illustrative of yet another feature of the present invention.

### DETAILED DESCRIPTION OF THE INVENTION

In the following description of the exemplary embodiments of the present invention  
10 reference is made to the accompanying drawings which form a part thereof, and in which are shown by way of illustration specific embodiments in which the invention may be practiced. It is to be understood that other embodiments may be utilized and structural and functional changes may be made without departing from the scope of the present invention.

As used herein, the term “message” may be used, but is not limited, to describe a segment  
15 of code that is received, analyzed, and rendered by a software application. In the exemplary embodiments described herein, messages are embodied as “code fragments.” However, it is to be understood that the invention is directed to “messages” in a broader sense, wherein a message representing an enhancement can be any of a number of forms, and is not limited to the exemplary code fragment embodiment. Unlike “triggers,” which are used in Advanced TV  
20 Enhancement Forum (ATVEF) standard applications, the code fragments of the present invention do not contain uniform resource locators (URLs). In contrast, the code fragments are specific instructions to an application or an Dynamic Hypertext Markup Language (DHTML) document resident and executable on a computer to which the code fragments are delivered. For

example, a software application may receive a code fragment written in JavaScript, evaluate it using a resident JavaScript interpreter, causing a side effect in the document object model (DOM) which causes the DHTML document to be re-rendered within the HTML-enabled browser. Essentially, a screen display that is “visually described” by HTML code may have a portion of it change upon receipt of a code fragment that will cause replacement of only a portion of the entire screen’s descriptive HTML code.

Additionally, the term “applets” is used to describe small applications that are delivered from a server to a client over a computer network. Applets, which may or may not be written in the Java computer language, are resident and functional at the client-side, but typically cannot be run without a browser or an applet viewer.

As illustrated in FIG. 1, one embodiment of the system of the present invention is employed by a broadcaster 100 to deliver enhanced broadcasting to its audience 102. In the exemplary enhanced broadcasting system, enhancements are delivered to users in the form of code fragments. The enhancements are designed to be correlated to content of television broadcasts. For example, enhancements for a televised football game could involve descriptions of football players, statistics, strategy planning, etc. for users at home. Enhancements for a televised quiz game show could involve quiz questions and scoring opportunities for users at home.

Enhancements are also correlated to television broadcasts with respect to time. In the case of pre-recorded automatic playback, an audio and video signal, such as a television signal, 104 is synchronized to related enhancements (served as code fragments) 106 with respect to a house clock 108. The house clock 108 is so named because it is utilized internally by the broadcaster 100 to synchronize timing at both the broadcaster station 110 and a broadcaster



authoring system 112, which is used to create code fragments 106. House clock 108 is also used to synchronize a push server 114, used to efficiently deliver code fragments 106 from authoring system 112 to a plurality of users 102. The house clock 108 may be, for example, the Greenwich atomic clock, a cesium oscillator, or a GPS receiver, all commonly used standards for precision time synchronization. While the description herein continues with references to house clock 108 as utilized for pre-recorded automatic playback, it is to be understood that the present invention also may be used in the context of live broadcasts. In this case, house clock 108 is not used to synchronize client computer 120 or authoring system 112. Instead, code fragments 106 are sent at the appropriate times relative to the live broadcast, and interpreted at the client side "as soon as possible." That is, code fragments 106 are sent and interpreted in real-time, concurrent with the live broadcast transmission.

Broadcaster authoring system 112 is contemplated, within the teachings of the present invention, as being computer-executable software that enables broadcaster 100 to create code fragments 106 for the purpose of enhancing the content of a particular broadcast. The software may include a word processor, a programming compiler, or other standard means of text entry. The software may also include communication with an external media player, or include its own media player, for the purpose of pre-playing a broadcast to assist in the development of appropriate and related code fragments.

In accordance with the teachings of the present invention, the software is automated, such that a user of the authoring system can select a point in time during the broadcast, indicate the preferred contents of the code fragment, and instruct the software to automatically produce a line of code descriptive of the indicated contents and including a time stamp for linking to the selected point in time. Also, the code fragments developed with the authoring system can be

created and pushed down manually, as is the case in a live-broadcast scenario in which messages are developed and delivered in real time.

For ease of use, the broadcast authoring software features the use of templates. Templates capture the structure of a message, having data fields representing each component portion of the message. Certain fields are pre-defined, and the additional fields are filled in by the authoring system 112 as a user supplies the necessary information. Authoring system 112 then extracts the data from the data fields, and assembles the message. In the exemplary embodiment, the message is a code fragment. Once rendered and viewed by a user at the client side, a completed code fragment represents an “enhancement.” By pre-defining commonly used messages, such as code fragments or components thereof, and making them available as templates, users of authoring system 112 need only enter limited information to complete construction of a code fragment.

For example, to create enhancements for supplementing a television game quiz show broadcast, a question/answer template is utilized by authoring system 112. The template is pre-defined as to size, shape, appearance, placement, and other attributes that will define the question/answer enhancement’s appearance on a computer screen when the template is rendered by Web browser software. The template lacks, however, substantive content describing any particular question or answer. Users of authoring system 112 supply the empty data fields of the template, through their computer keyboard or other input device, with a question and a set of multiple choice answers to appear in an enhancement. While doing so, the rendered question/answer enhancement is displayed on a portion of the screen such that it continually updates according to the information being supplied by the user. In this way, the user can visualize the end-product enhancement while he is in the process of modifying the code of a

template for creating the completed code fragment that will describe the end-product enhancement.

Once received by client computer 120, code fragments 106 are processed in any of a number of ways. For example, code fragment 106 may act at client computer 120 to set or  
5 change an internal controlling state variable which would cause a presently displayed DHTML document to be re-rendered within Web browser 128. Alternatively, code fragment 106 can cause Web browser 128 to fetch a new DHTML document, or Web page, and to extract data from the fields of code fragment 106 to dynamically create and display the fetched DHTML document. Still another function of code fragment 106 is to cause a side effect, changing the DOM, which causes the currently displayed DHTML document to be re-rendered. In all cases,  
10 once the re-rendering or fetching of the DHTML document is triggered, other information within the data fields of code fragments 106 is gleaned and utilized to construct the DHTML document, thereby providing updated and continually evolving enhancements.

A complete code fragment is generated by the broadcaster authoring software, as  
15 described above, using a combination of the information in the pre-defined template and the information supplied by the user. The software also includes access to a database or other type of data storage. Utilizing the software, users of authoring system 112 can create code fragments 106, associate them with time-stamps indicative of requested delivery time, and store them for future delivery during a particular broadcast show.

20 In accordance with the teachings of the present invention, user 102 is able to simultaneously enjoy broadcast 104, which is delivered through standard broadcasting means 116 and on a receiver such as a television 118, and to interact with the broadcast enhancements on a separate receiver, such as a computer 120. The broadcaster houses Web server 122 which



Exemplary code fragment 212 comprises an identifier 214 and five arguments 216 to populate the array or table of the question HTML template within  $f_1$  frame 204. When applet 130 receives code fragment 212, identifier 214 indicates how the remaining arguments 216 will be analyzed. Applet 130 serves the received code fragment 212 to a JavaScript interpreter, where a handler, designed to process a particular type of message, process code fragment 212 according to its message type. Code fragment 212 is accordingly served to Web browser 128. In this exemplary scenario, identifier 214 is the letter, "q." The handler contains code that, in case "q," causes a "question template" HTML document to be populated by the remaining five arguments 216 of code fragment 212 and placed  $f_1$  frame 204. The result of this population is shown in FIG 3 where  $f_1$  frame 204 presents to a user the question 300 and four possible answers 302 that were contained in as the last five arguments 216 and could fragment 212.

It is to be understood that DHTML document 200 can contain any number of frames, organized in any manner, and that each of the frames can contain any HTML, or other, template. Code fragments can contain any number or type of arguments, and applet 130 can evaluate code fragments in any of a number of standard methods known in the art. The selection of templates for placement within different frames can be controlled with the use of identifiers recognized by an applet as explain herein, or by any other means that will be apparent to those skilled in the art.

In addition to responding to code fragments received over the Internet to Web browser 128, DHTML document 200 also functions through direct audience participation. User 102 participates with broadcast 104 and Web content 124, 106 by providing input 134 to his computer through a user input device 136, such as a keyboard, mouse, microphone, or other peripheral device. DHTML document 200 recognizes and analyzes user input 134, which is rendered by Web browser 128 and displayed on monitor 132.

Also supporting the interactive experience of the present invention is the added feature of synchronization, which ensures that the content displayed on the user's computer 120 is timed according to the content displayed on television 118. Synchronization can be achieved in a variety of different ways. These can include real-time delivery methods and Network Time Protocol (NTP) methods, though those skilled in the art will appreciate that alternative synchronization protocols are within the scope of the present invention.

In a real-time delivery embodiment, code fragments 106 are delivered to users according to the times they are to be viewed by the users. In this embodiment, a user's client-side computer 120 will receive and render a code fragment immediately upon delivery.

In an alternate embodiment, code fragments 106 include time stamps. In this embodiment synchronization is achieved, for example, by NTP. This embodiment is more reliable than the previously disclosed embodiment in cases where delivery times of code fragments are uncertain. Such uncertainties can arise, for example, from network congestion or low quality network service provided to users. NTP entails synchronizing the client's application clock to "global time." Global time is, in the exemplary embodiment shown, determined by house clock 108. Code fragments 106 sent to each user's computer (client computer) 120 are time-stamped according to global time, and each client computer 120 evaluates the code fragments based on the code fragment's synchronized application clock. The code fragments are rendered by the client computer at the time specified by the timestamps contained in each code fragment. The time stamps are read and interpreted by applet 130 in the context of the client computer's synchronized application clock. This puts the user in the same time frame as the broadcast content, yielding a realistic, time-oriented, interactive experience.

FIG 4 is a flow diagram illustrating logic that is exemplary of DHTML document 200 with embedded applet 130. In step 400 client computer 120 receives an input. This input may be a code fragment 106 sent by the broadcaster and delivered over the Internet, or it may be an input 134 from a user 102 of the system. In step 402, the source of the input is determined. If the input is a user input 134, it is automatically directed to Web browser 128 at step 404, where it is rendered within DHTML document 200 therein at step 406. This will cause at least a portion of the current display of monitor 132 to change or update, as a result of the user input 134.

For example, the user input 134 may be an answer in response to a question posed on the user's display monitor 132 or television 118. If the user enters a correct answer, DHTML document 200 resident in Web browser 128 will cause monitor 132 to display a flashing "Correct!" graphic on the computer screen.

If, on the other hand, the computer input is determined at step 402 to be a code fragment 106, embedded applet 130 receives the code fragment at 408 and directs it to be analyzed at 410. The analysis is as described with reference to FIG 2 and FIG 3, though it can involve further processing. Here, for example, the JavaScript interpreter recognizes a time stamp indicating when code fragment 106 should be rendered and displayed according to computer's 120 synchronized application clock. Based on the analysis, Web browser 128 receives code fragment 106 at the correct time at 412, and subsequently, at 414, DHTML 200 document therein renders the input received from the JavaScript interpreter.

For purposes of illustration, an exemplary scenario that may be employed within the scope of the present invention is provided. The exemplary scenario involves a television game show in which users may both watch the contestant on a television set and compete against the contestant through a computer. Both the individual users and the contestant are challenged by

the same game and are subject to the same timing constraints and limitations. As a result, both the individual users and the contestant can control the outcome of the game. Thus, unlike ordinary television, enhanced television systems of the present invention enable a user at home to participate in and to enjoy an interactive experience by directly participating in the televised game show.

A sequence of events which may occur in the exemplary game show scenario is illustrated in FIG 5. As previously described, a broadcast signal 104 is sent by the broadcaster station 110, and broadcast enhancements 106 is sent from broadcaster authoring system 112 by push server 114. The broadcast and its enhancements are synchronized according to house clock 108. In this exemplary illustration of the present invention, the game show comprises questions which both the television contestant and the individual user may answer. Points are earned by each according to whether their respective answers are correct or incorrect.

For example, the game show may begin with a first question, sent in the broadcast signal 104 and in a code fragment 106 created with broadcast authoring system 112. This question is received in its broadcast form by a individual user's television at 500, and in its code fragment form by the user's computer at 502. The user sees or hears the question when it is presented on his television at 504, and simultaneously sees or hears the question on his computer at 506. At this point in time 508, a period of interaction 510 begins. The user is free to ponder and answer the question at 512, at any time within interaction period 510. At 514, when the contestant on television runs out of time or submits an answer that may be seen or heard by the user on the television, a code fragment is sent or a previously-sent time stamp is read which causes the user to lose the ability to submit an answer to the computer. At this time 516 the period of interaction 510 ends.



Thus, the contestant and the individual users are subject to the same time constraints and rules. The contestant on television may be rewarded for a correct answer to the question; similarly, if correct, the individual user also will receive affirmation through a display or sound on the computer acknowledging such. With each new question, new periods of interaction 510 occur, enabling an user to enjoy a unique, interactive experience that was unachievable prior to the present invention.

Another feature of the present invention is its ability to enable a large number of remote users to compete against one another. Referring back to FIG 1, assets 124 are communicated bi-directionally, such that any individual user's 102 activity can be reported back to broadcaster 100. By tracking and storing all incoming scoring data, users playing a game through the enhanced television systems of the present invention and achieving various levels of scores can, in effect, compete against one another.

FIG 6 illustrates an exemplary procedure of the present invention in which users can actively compete against one another. As part of the display hosted by a user's Web browser 128, a leaderboard 600 can be provided in accordance with the teachings of the present invention to inform users of their relative scores. A "top scores" leaderboard, for example, would display the names and ranks or scores of the highest ranked users at any point in time during an enhanced television game or event utilized by the present invention.

For example, the winning user would be named first in the leaderboard 602, followed by the second place user 604, and so on. Such reporting of winning standings provides users of the system with an incentive to continue playing and attempting to win. An alternative to the "top scores" leaderboard is a "local scores" leaderboard as illustrated in FIG 7. This local scores listing would be based upon each individual user's standing. A "local scores" leaderboard 700

for a particular user would include that user's rank or score 702 in the middle of the list, several users 504 ranked below that user, and several users 706 ranked above the particular user.

The present invention provides yet another alternative mode of competition. Rather than being able to view only the top scoring users or the local scoring users, any user has the ability to select from a variety of pre-established groups of users, such that only users belonging to the selected group will appear on that group's leaderboard. In this manner, a user is able to organize and join groups of his or her preference.

In an exemplary embodiment, a user who establishes a group will select both its name and password. The selected group name and password are proposed by the user to the broadcaster Web server 122, where they are verified for uniqueness. If no other group exists with an identical name/password combination, Web server 122 designates the user-selected group name and password.

Once a group is established, any user in possession of the group's name and password can join that group, such as through the dialog box shown in FIG 8. The user simply selects a desired group, such as through a drop-down menu 802, and enters the associated password, such as through input field 804. The information is then sent to Web server 122, which recognizes that the user is now a member of the selected group. During a game, Web server 122 delivers the scores of all users who have joined the group, and DHTML document 200 organizes those scores to create a personalized leaderboard in accordance with the teachings of the present invention. In this way, a user can invite anyone, such as a family member or friends, or any number of other users to join a customized group competition. This feature of the present invention enables a personal competitive ability not offered or found in prior art systems.

The foregoing description of the exemplary embodiments of the present invention has been presented for the purposes of illustration and description. It is not intended to be exhaustive or to limit the scope of the invention to the precise form disclosed. Many modifications and variations of the present invention are possible in light of the above teachings. For example, broadcasts involving content other than game shows may be utilized within the scope of the present invention. Also, displaying the enhanced portion of the broadcast of the present invention can be accomplished with alternative visual software other than a web browser or applet viewer. It is also contemplated as being within the scope of the present invention to enable the user to submit inputs to the broadcaster for various alternative feedback purposes. Additionally, it is within the scope of the present invention for a user to select other users for the formation of a competitive group for purposes of comparing scores such as in a leaderboard. The present invention also is not limited to being used for broadcast enhancements and interaction across the Internet alone. Rather, the invention may be used for different types of enhancement programs across a wide variety of computer and communications networks.

It is intended that the scope of the invention be limited not by this detailed description, but rather by the claims appended hereto.

WHAT IS CLAIMED IS:

1. An enhanced broadcasting system for presenting audio or video broadcasts and related enhancements, the system comprising:

a receiver for receiving an audio and video broadcast signal;

a first display unit, connected to the receiver, for displaying content of the audio and video broadcast signal;

a computer configured for receiving a code fragment correlated to the content of the audio and video broadcast signal;

the computer executing software for interpreting the code fragment and correlating the code fragment to the audio and video broadcast signal with respect to time; and

a second display unit, connected to the computer, for displaying the interpreted code fragment.

2. The enhanced broadcasting system of claim 1 further comprising:

an application clock operatively connected to said computer and synchronized to a house clock such that the broadcast signal and the code fragment are correlated with respect to time.

3. The enhanced broadcasting system of claim 1 wherein the software application is an applet.

4. The enhanced broadcasting system of claim 1 wherein the code fragment is written in JavaScript.

5. The enhanced broadcasting system of claim 1 wherein the computer receives the code fragment through a communication network.

6. The enhanced broadcasting system of claim 4 wherein the communication network is the Internet.

7. An enhancement for the content of an audio and video broadcast, the enhancement comprising:

a code fragment containing information related to the content of the audio and video broadcast and a time stamp such that rendering of the code fragment is chronologically synchronized to receipt of the broadcast.

8. The enhancement of claim 7 wherein the code fragment is written in JavaScript.

9. A method for providing enhanced television broadcasting, the method comprising:

selecting a common time for a synchronized presentation of an audio and video signal and a related enhancement;

broadcasting the audio and video signal for receipt by a broadcast receiver;

sending the enhancement from a computer server over a network for receipt by a client computer;

displaying the audio and video signal on a first display screen at the common time;

interpreting the enhancement; and

displaying the interpreted enhancement on a second display screen at the common time.

10. The method for providing enhanced television broadcasting of claim 9, wherein the enhancement comprises a code fragment.

11. The method for providing enhanced television broadcasting of claim 10 wherein the code fragment comprises a timestamp.

12. The method for providing enhanced television broadcasting of claim 10, wherein the first display screen is operatively connected to a television and the second display screen is operatively connected to a computer monitor.

13. The method for providing enhanced television broadcasting of claim 9, further comprising:

receiving an input from a user of the client computer;

executing software on the client computer to analyze the input;

assigning points to the user according to their analyzed input, such that the user accumulates an earned score.

14. The method for providing enhanced television broadcasting of claim 13, further comprising:

delivering to a particular user earned scores of each of a plurality of users;

organizing the delivered earned scores according to their relative values; and

displaying the organized earned scores to be viewed by the particular user.

15. The method for providing enhanced television broadcasting of claim 14 wherein the plurality of users is selected by the particular user.

16. The method for providing enhanced television broadcasting of claim 14 wherein the delivering of earned scores of a plurality of users to a particular user is in response to the particular user joining a group comprising the plurality of users.

17. The method for providing enhanced television broadcasting of claim 16 wherein the joining comprises the steps of:

providing to the server computer a group name assigned to the group; and

providing to the server computer a password assigned to the group and uniquely associated with the group name.

18. The method for providing enhanced television broadcasting of claim 13 further comprising:

assigning a group name to a group, the group capable of being accessed by a plurality of users;

assigning a password to the group, such that the group name and the password are uniquely associated;

storing the uniquely associated group name password on the server computer;

receiving at the server computer a query group name and a query password from a joining user;

comparing the query group name and query password received from the joining user to the uniquely associated group name and password stored on the server computer;

providing the joining user access to the group if the query group name and query password are identical to the uniquely associated group name and password stored on the server computer; and

reporting to each user having access to the group the earned score of all users having access to the group.

19. The method for providing enhanced television broadcasting of claim 18 further comprising:

ranking the earned scores of the plurality of users having access to the group to determine a relative score for each user having access to the group; and

reporting, to each user having access to the group, the relative scores.

20. The method for providing enhanced television broadcasting of claim 19, wherein the reporting comprises displaying the relative scores in ranked order within a leaderboard.

Variable	Mean	SD	Min	Max
Age	34.5	10.2	21	55
Gender	0.5	0.5	0	1
Marital status	0.6	0.5	0	1
Education	12.5	1.5	9	16
Income	15.2	8.5	5	35
Occupation	1.2	0.8	0	2
Health status	1.5	0.5	1	2
Stress level	2.5	1.2	1	4
Life satisfaction	3.5	1.5	1	5
Resilience	4.5	1.5	2	6
Optimism	3.5	1.5	1	5
Self-efficacy	4.5	1.5	2	6
Emotional stability	3.5	1.5	1	5
Psychological well-being	4.5	1.5	2	6
Life satisfaction	3.5	1.5	1	5
Resilience	4.5	1.5	2	6
Optimism	3.5	1.5	1	5
Self-efficacy	4.5	1.5	2	6
Emotional stability	3.5	1.5	1	5
Psychological well-being	4.5	1.5	2	6



## ABSTRACT

### SYSTEM AND METHOD FOR ENHANCED BROADCASTING AND INTERACTIVE TELEVISION

An enhanced interactive television broadcast is disclosed wherein an audio/video broadcast is viewed on a first display system, and an "enhancement" to the broadcast is simultaneously viewed or experienced on a second, separate display system. The "enhancement" is synchronized to the broadcast, and delivered to a user as a code fragments, such as a JavaScript message. URLs are not required. Portions or elements of a web page are reduced to single code fragments, rendered client-side upon receipt. The invention implements Network Time Protocol (NTP) to synchronize the client's application clock to global time. Messages, or JavaScript code fragments, are time-stamped and evaluated based on the client's application clock.

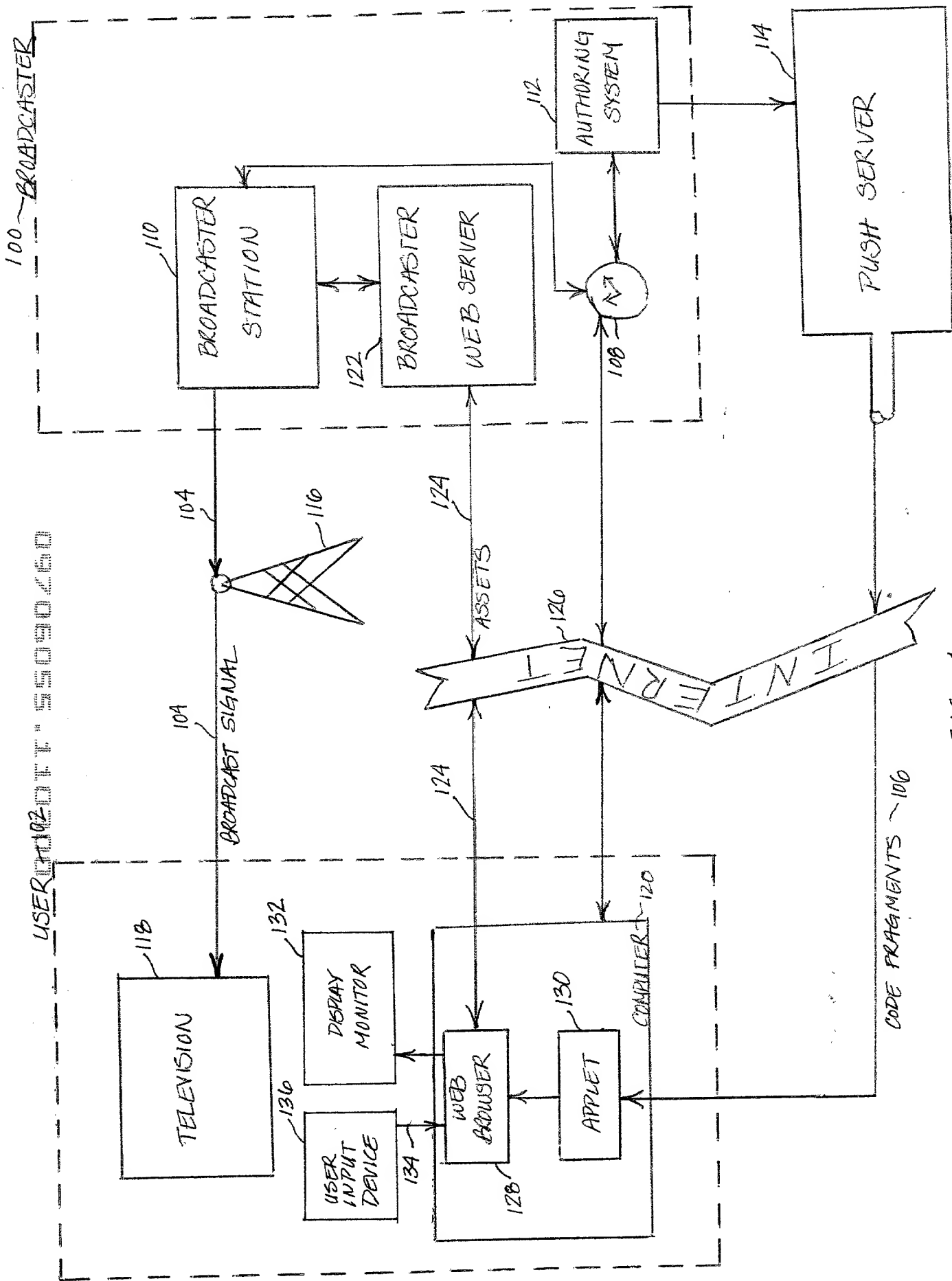
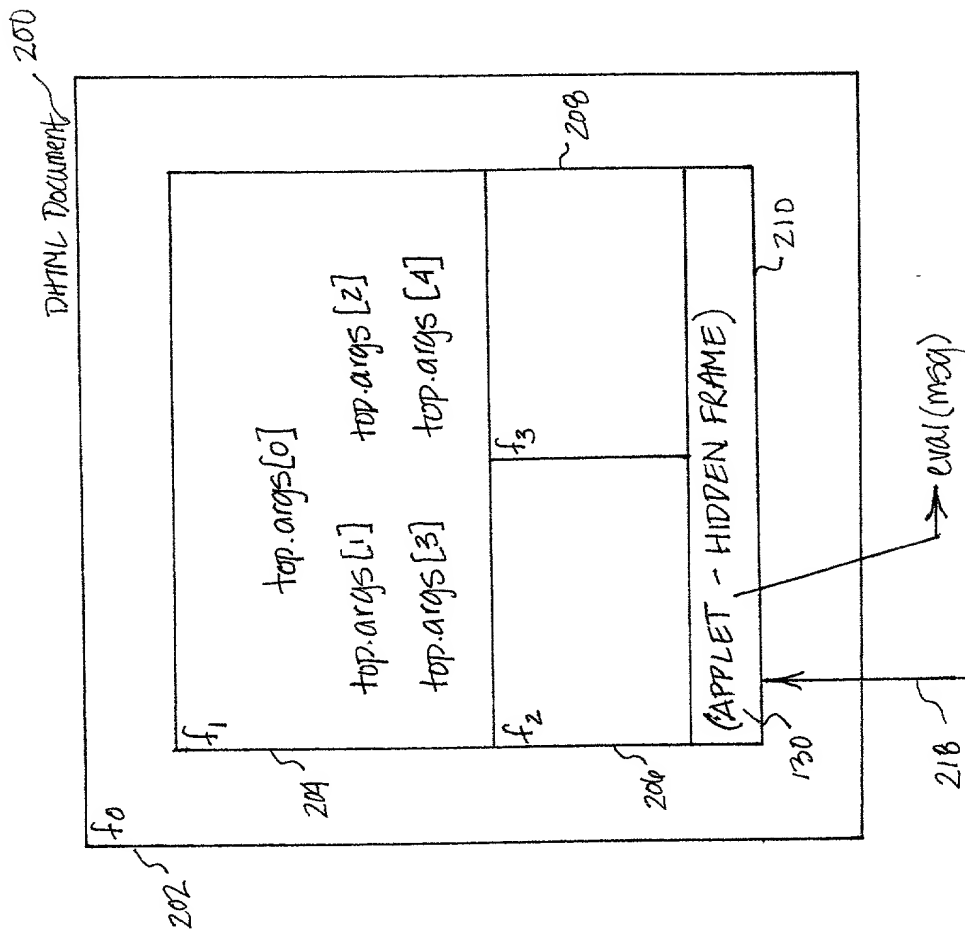


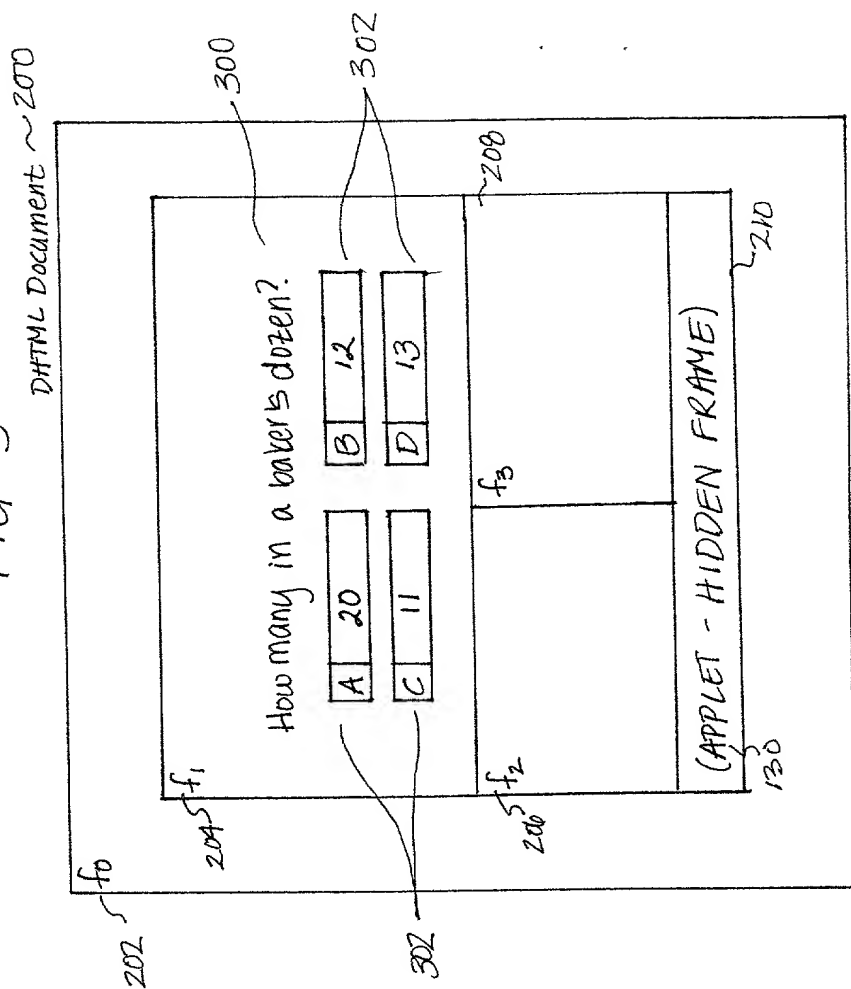
FIG 1

FIG 2



212 { neg ("q", "How many in a baker's dozen?", 20, 12, 11, 13")

FIG 3



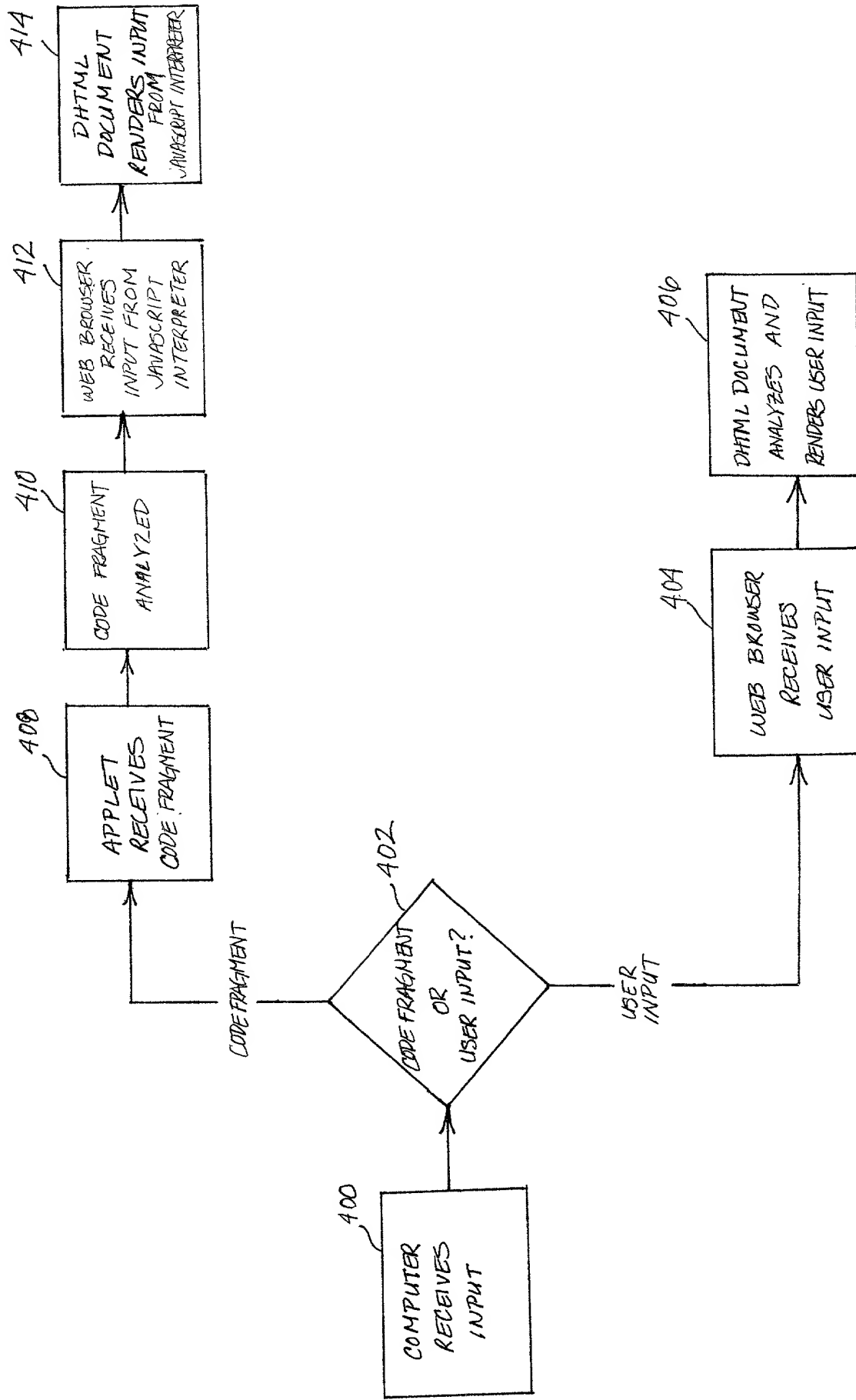
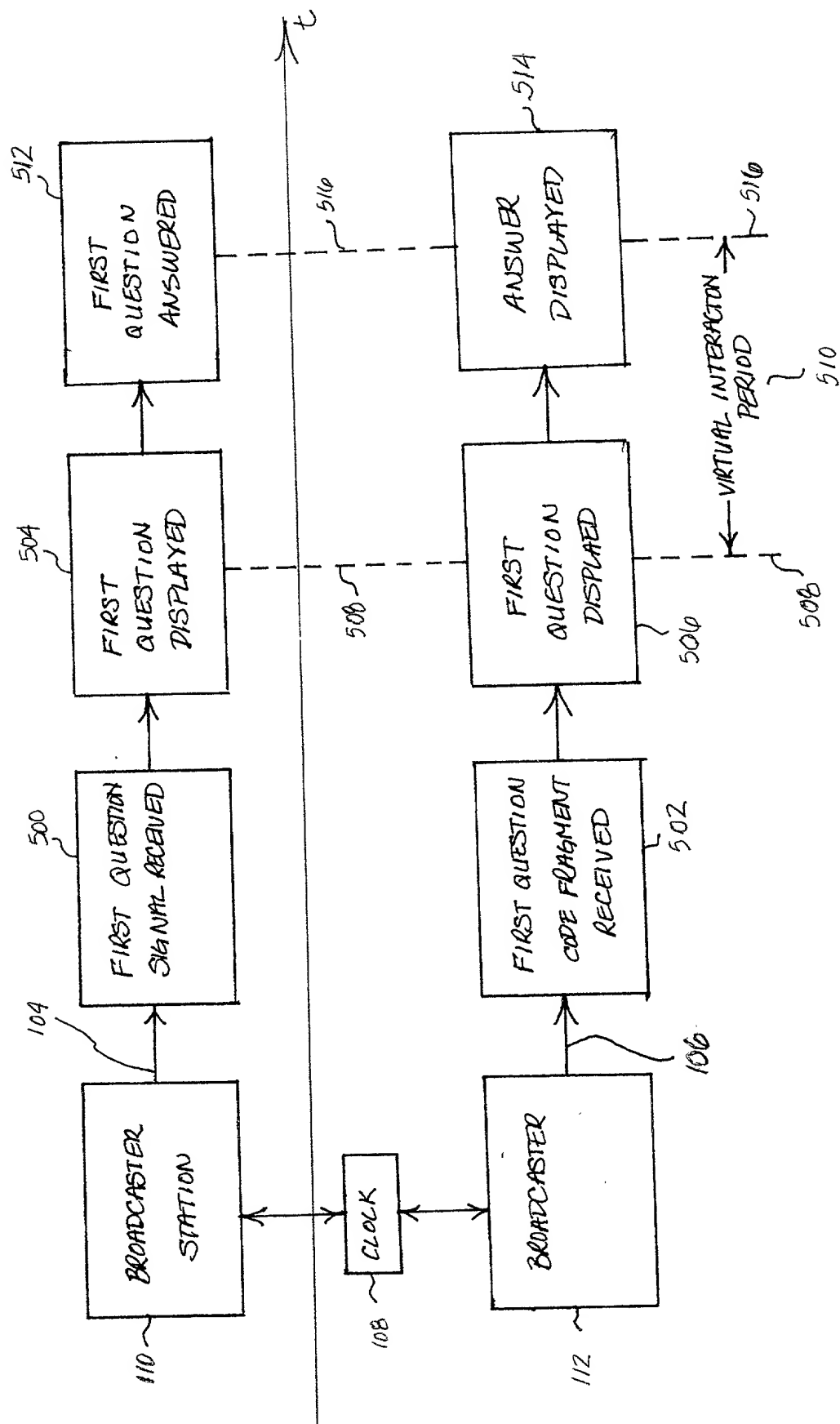


FIG 4



5  
F/G

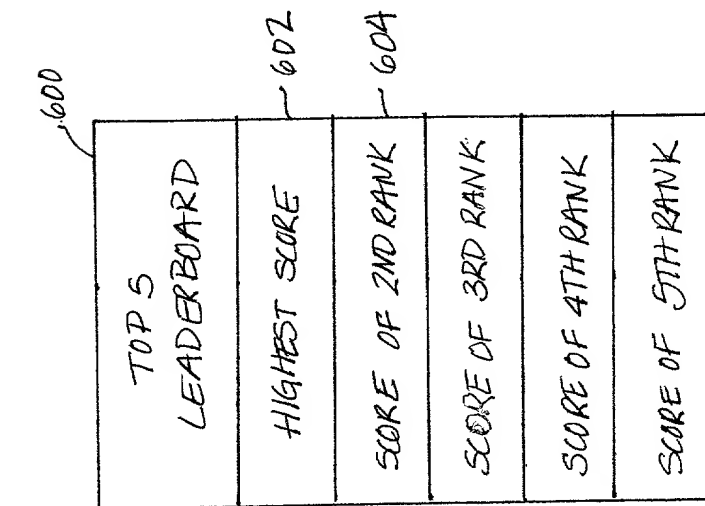
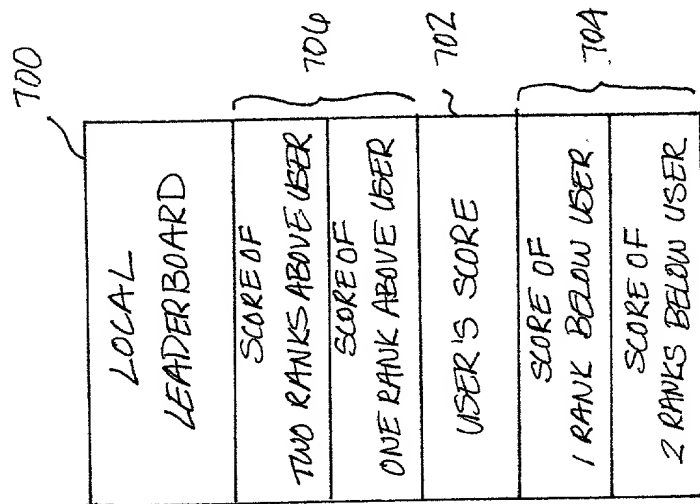
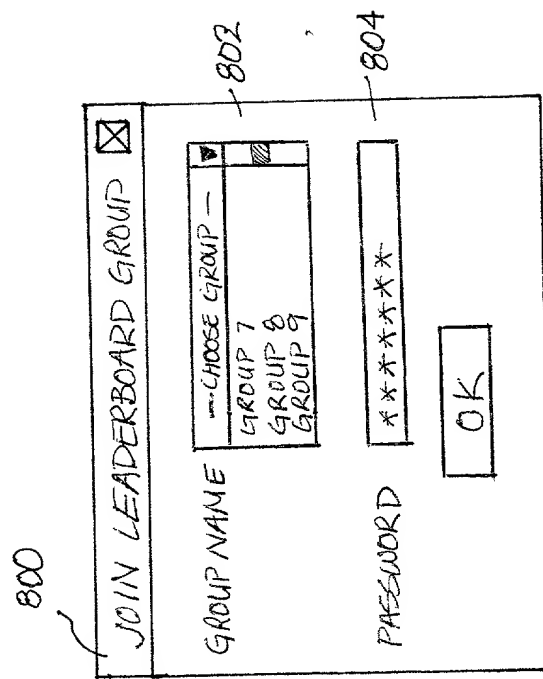


FIG 6



Flg 7



F1G 8

## United States Patent Application

## COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and sole inventor (if only one name is listed below) or a joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: SYSTEM AND METHOD FOR ENHANCED BROADCASTING AND INTERACTIVE TELEVISION

The specification of which

- a. ☒ is attached hereto  
 b. ☐ was filed on      as application serial no.      and was amended on      (if applicable) (in the case of a PCT-filed application) described and claimed in international no.      filed      and as amended on      (if any), which I have reviewed and for which I solicit a United States patent.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56 (attached hereto).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

- a. ☒ no such applications have been filed.  
 b. ☐ such applications have been filed as follows:

FOREIGN APPLICATION(S), IF ANY, CLAIMING PRIORITY UNDER 35 USC § 119			
COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)
ALL FOREIGN APPLICATION(S), IF ANY, FILED BEFORE THE PRIORITY APPLICATION(S)			
COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)

I hereby claim the benefit under Title 35, United States Code, § 120/365 of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. APPLICATION NUMBER	DATE OF FILING (day, month, year)	STATUS (patented, pending, abandoned)

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below:

U.S. PROVISIONAL APPLICATION NUMBER	DATE OF FILING (Day, Month, Year)

I hereby appoint the following attorney(s) and/or patent agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith: I appoint the following:

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Marc Bobys, Reg. 45,267

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Oppenheimer Wolff & Donnelly LLP to the contrary.

Please direct all correspondence in this case to Oppenheimer Wolff & Donnelly LLP at the address indicated below:

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

INVENTOR	Full Name Of Inventor	Family Name Watson	First Given Name Scott	Second Given Name
	Residence & Citizenship	City Santa Clarita	State or Foreign Country California	Country of Citizenship USA
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Signature of Inventor 201:			Date: 11/8/00	



**§ 1.56 Duty to disclose information material to patentability.**

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
- (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim;
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
  - (i) Opposing an argument of unpatentability relied on by the Office, or
  - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) Each inventor named in the application;
- (2) Each attorney or agent who prepares or prosecutes the application; and

(3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.